

## Annual Reporting - MEETING AGENDA

### Gila River Basin Native Fishes Conservation Program -Annual Reporting Meeting December 13-14, 2022

Tucson – U of A: 1064 E. Lowell St., Tucson, AZ 85719

#### Annual Reporting Meeting Objectives:

- Provide updates on 2022 accomplishments.
- Discuss upcoming non-Program funding opportunities.

#### Action Items:

- Send out a survey later for which species should be added to eDNA efforts
- Organize request for black bullhead samples
- Send out the 2023 plans for monitoring – Marsh and Associates
- Google drive send out – SDR
- Further Discussion on BOR grants or other funding sources

Link to recording [HERE](#)

#### Kent welcome/announcements:

- Announcement that Bill Stewart has left, opening vacant position.
- Doug Duncan has left, Cat Crawford has taken his position

#### Participation:

Kent Mosher, Brian Hickerson, Kurt Gill, Jasmine J, Jill Wick, Josh Walters, Hudman Evans

#### On Zoom:

Cat Crawford, Lisa Rivera, Yvette Paroz, Mary Fugate, Eileen Henry, Albert Sillas, Alana Simmons, Chad Baumler, Clint Smith, Crosby Hedden, Kelsie Field, Ryan Gordon, Ryan Mann, Steph Coleman, Steve Mussmann, Tim Frey, Wade Wilson, Christina Perez, Julie Carter

#### Species Status Update *Cat Crawford, US Fish and Wildlife Service*

Goal of Presentation [LINK](#)

- Have money for Doug's position, but it hasn't been flown, hoping in the next few months.
- In AZ capacity is low, down 8 employees.
- Gila Topminnow
  - 90-day substantial finding, into 12-month review, status assessment ongoing
  - Hoping to finish this year, in national work plan as 2023, staff changes have influenced timing
  - Range now includes MX; addressing that they are endangered in MX, rule will be published (perhaps as part of the 12-month finding/or not)
- Gila Chub
  - Delist the Gila Chub, due to reclassification

Recovery Planning: for all species there has been a recent 5-year or they are in progress or upcoming

- Spikedace/Loach minnow this year
- Gila chub/topminnow – decision in play will effect dates and reviews
- Many moving parts

### Questions/Discussion/Clarification:

- Gila chub proposed rule, no proposed timeframe (clarification)
- IF there is no court order, things can slide, court orders make things move faster
- 2023 spikedace/loachminnow are correct
- No staff to be hired, continuing
- No SSA's for loach minnow, Spikedace maybe

### Questions:

- Genetics: different sides on the Gila Chub. What is the latest thinking?
  - Past decision, AFS taxonomic review, new evidence/research, emerging science
  - Hawaii research: being submitted soon, be on the lookout
- Reporting requirement for Gila Chub? How has this changed
  - Still considered listed, Reporting stays the same for now
  - Link for petition finding for Gila and Rountail Chub click [HERE](#)

### **eDNA Yvette Paroz, US Forest Service and Kent Mosher, BOR**

#### Goal of Presentation [LINK](#)

- Results of sites sampled (list and map)
- Published eDNA paper
- Status of marker development

### Notes:

- Verde: Round tail chub, still distributed well in the Verde
- San Fran: Round tail chub and
  - Need more investigation
- Narrow headed garter snake
  - Positives in places they hadn't been found before
- eDNA – can resample multiple times, before you run out of samples
- Many markers are done now
- **Need black bullhead samples**
- Gila topminnow – finding different lineage in that marker
- No positives for Floater mussel yet, but could be around
- Bass have been confirmed as red eye using genetic analysis

#### What next in eDNA – Kent - Presentation

- Next agreement will be with RMRS: Tommy Franklin will be contact
- 7 new markers to be developed
- Second task in agreement-
  - Create a biochip/panel and have 12-50 primers on there (single spp – high confidence)
  - Many markers on chips, overall
  - Inverse relationship on how many you can process
  - There is a development cost, so the species need to be “set”
  - Need to discuss priority spp on this bio chip
    - **Can send out a survey later for which species should be added (get list from Kent)**
    - Tilapia may need to be added (as per Scott)
- Contact Kent and Yvette if you plan to do eDNA

## **Gila River Basin Monitoring** *Kurt Shollenberger, Marsh and Associates*

Goal of Presentation [LINK](#)

- 2022 Monitoring results
- Plans for 2023

### Notes:

- Green sunfish from ponds may have gone into Fresno Canyon, will be monitored annually
- Cienega creek – topminnow down, likely elsewhere, pools shifting due to sediment
  - Found dead toads and frogs in the creek, tested positive for chitrid and ranavirus
- Lower Blue River – fire impacts caused fish kill in the past, seeing some recovery. Rountail and topminnow are not recovering as well relatively.
- [Can send out the 2023 plans for monitoring](#)

### Questions/Discussion/Clarification:

- How did longfin get into Coal mine site?
  - Tranlocated from Fresno, been there previously
- Ranavirus – glad the info was shared, emerging disease, if you find dead frogs please tell USFWS.
  - Can affect turtle, fish and frogs.
  - Not much info on how it effects fish.
  - NAU will be looking in to this.
  - Seeing it in primarily S. AZ so far.

## **Non- Native Fish Detection in the CAP using eDNA**, Kent Mosher

Goal of Presentation

### Notes:

- 210 sequences that match fish dna sequence
- Grass carp taking up a lot of space in the CAP as per eDNA sampling, next is common carp
- Compared traditional sampling vs eDNA
  - Traditional sampling worked “mostly” except for mosquitofish and green sunfish
  - eDNA worked better (especially for rare species)
- Have detected spiny soft shell and red eared slider turtles through primer database
- Weak, positive relationship captured and eDNA frequency (low r value)
- CAP next: lake pleasant samples being processed
- eDNA is expensive but less complicated than the crane/boat/labor = may be equal in the end.
- 2025 is the next time it will be monitored

### Questions/Discussion/Clarification

- Striped Bass – detected but a low detection.
- 75% of reads coming from carp

## **Gila Chub Habitat Suitability – San Francisco River**, *Kelsie Field, NM State University*

Goal of Presentation

- Project update

### Notes:

- Site selection for repatriation is complex
- Used predictive analytics
- Used extant populations to build predictive model (which included many other variables)

- Luna site too cold, Hot Springs is a caution if the non non-natives can be removed, NDGFPM site is recommended

### Genetics Management Plan Update *Kent Mosher, BOR*

#### Goal of Presentation

- Gila Topminnow
- Loach minnow – upcoming
- Spikedace – upcoming

#### Notes:

- Purpose: guidance for augmentation, replicating lineages appropriately, meeting genetics needs of recover.
- Gila topmillow, loachminno , spikedace
- Wade Wilson – genetics plans, gathering background data, draft plan hopefully next year afor sp and lm
- Gila top – mid 2023 – Steve Mussman is lead here
- Will work on the other 2 species after that and will use same team (roughly)

#### Dr. Peter Reinthal contribution

- The cleanest old genomes for spikedace for any fish..
- Interesting divergence between AZ and NM
- Looking at levels of inbreeding, mutations, gene families
- Genome manuscripts coming
- pHD student finished in December (Nicholas)
- Working with Alex and Tom Turner as well, good collaboration
- Compared census pop size of spikedace and loachminnow in Arivaipa
- Verde River Spikedace was a distinct population
- NM has lost a lot of diversity
- Continues to support the importance of Aravaipa
- Captive breeding populations are quite diverse.

#### Questions/Discussion/Clarification:

- Spike dace – effective pop size in Araivapa? 2800
  - Populations are contracting and expanding depending on flow and habitat.
  - Concerned about LM and SPD in the long term

### Hemiclonal hybrid in Santa Cruz – Steve Mussman

#### Presentation

- First of its kind *P. monachal-occidentalis*
- Reproduces by host/parasite with gila topminnow
- Only female so far
- Data collection since 2017
- Taking over in parts of the Santa Cruz
- Likely introduction from MX
- Flood events/moving fish probably contributed to spread
- Need to be careful with GT, none of the extant populations have seen these before, no evolutionary ability to deal with them

- Conservation impacts are uncertain, monitoring needed

### **Aquatic Research and Conservation Center** *Josh Walters and Hudman Evans, AZ Game and Fish*

#### Goal of Presentation

- 2022 Production numbers
- Hatchery collection discussion
- Modernization effort

#### Notes:

- Successful spawn: used 14 raceways
- Of 14, 6 were blue river loachminnow (largest broodstock)
- Well below the target of 500, wild fish limited
- Gila Fork spikedace very successful in a single raceway
- Production is variable annually
- Aquatic vegetation was present this year, made it challenging
- Pit tagged fish can successfully spawn, seeing that, due to age class of Spikedace, haven't tried it LM yet
- Research
  - Loach minnow nest spacing – space of the next by 10, 15, 20 in hopes the number of larval fish will go up. Algae hindered results this year. Looking to continue in the coming years. 15 has been optimum, hoping to reduce space and make more offspring
  - VIE tag retention: Goal: To help with brood stock management/identifying where the population came from in LM and SPD, marking them by color and location, going well, 0 tag loss in fish in both spp, mortality is very low due to tags – handling can cause mortality because it's frequent.
  - Modernization effort – Ryan Mann. 2015 started to think about updating, improve infrastructure, military crates as raceways, etc. Broken into many phases 2016-2018 2 phases done, new spawning raceways, establish an expansion of the facility with retaining wall, updated research ponds, plumbing, increased capacity of tanks. Phase 3 – new building for office, O and E, storage, biosecurity, wet lab – initial design- cost 660k, covid delayed, agreements and re cost is now 1.7 million, sobering. On hold, pursuing other funding sources. Moving forward on more equipment that will help with disease identification, and other projects.

#### Questions/Discussion/Clarification:

- Bear creek fish, did they spawn? Yes. 65 offspring. Ready to go
- 8mm pit tags in LM and SPD?, no, logistically hard.
  - Hoping for a visual reference, high confidence, and color helps
  - Pit tags could other good uses for sure

### **Arizona Game and Fish Department** *Brian Hickerson, AZ Game and Fish*

#### Goal of Presentation [LINK](#)

- 2022 species stockings, removals, and monitoring results

#### Questions/Discussion/Clarification:

- Sycamore creek – Bonar reports some of the area was clear, they were getting non native fathead, green sunfish, where are they coming from. Lots of people bait/fish dump in here.

## Spring Creek tagging study update, Sky Hedden

### Goal of Presentation

- tagging study update

### Notes:

- Post stocking survival and emigration of hatchery reared SPD and LM and compare these estimates to their counterparts.
- 600 meter reaches, antennas 40-day life
- Tagged 1500 fish (wild and hatchery)
- Short term survival after tagging high in wild and hatchery
- Post stocking emigration: 5 times higher in hatchery fish, downstream
- Long term apparent survival: longer time frame drops faster for hatchery fish, likely due to the movement downstream. 60 days for hatchery, wild fish 147
- Long distance dispersals over fish barrier: 4% of hatchery fish detected, 0% wild fish; low proportion of fish detected below fish barriers
- Stocking time and where you put them matters!

### Questions/Discussion/Clarification:

- Did you have an opp to look at timing in terms of flow? Pre vs post monsoon? Were long distance associated with flooding events?
  - Yes, some were associated with high flow events, but in the longer term survival they included flow events as a variable but it didn't 'pop'. Hard to interpret. Large flow don't drive downstream movement.
- Hot springs fish moved a lot,
- Barrier for acclimation, flow training at ARCC would be helpful.

## New Mexico Department of Game and Fish *Jill Wick and Jasmine Johnson, NM Fish and Game*

### Goal of Presentation [LINK](#)

- 2022 species stocking, removals, and monitoring results

### Questions/Discussion/Clarification:

- Harden Cienaga ponds: are there fish in there and what's the plan.
  - They don't know, hoping that the land owner will let them in. No plan at this time. Hopefully more discussions this year. They said yes, then retracted.
- Assumed that this where the green sunfish came from?
  - Could be, but perhaps in other tanks as well. Maybe it's from Distill tank.
- Hart bar? Ideas on the why there is a decrease in abundance and why catfish are going up?
  - Not sure, not seeing recruitment they are all big fish, white water baldy knocked them out, downstream is warmer, large fish will move all the way up in the summer, then migrate back down. Sky thinks they are just slowly recovering. Elevated water temps?? Could be..
- Abundance for fish this fall was low overall. Bad year in the Gila. Not sure we can make any big assumptions about catfish.
- More fires also affected.

## BLM- Aravaipa and Bonito Creek, *Mary Fugate for Heidi Blasius*

### Notes:

- Both creeks has work; march and april LM – non captured at bonito, beavers present
  - Also did non native removal (10) 770 yellow 448 from shocking and rest with traps

- Aravaipa
  - 58 SPD, 49 LM at 6 of 9 sites – spring
  - Fall – 229. – at upper sites, 140 LM 11 YOY..
  - Non native removal 940 Yellow bullhead
  - Adjusted shockers to still get Yellow bullhead but less impacts to natives
- 2023
  - Spring and fall monitoring
  - Marsh and Associates will help with non native in both creeks
    - No dates yet on the removal
  - Spring in Aravaipa – March 31st and April 1st

#### **YY Male** *Chad Teal, University of Arizona*

Goal of Presentation [LINK](#)

- Project/defense update

#### **Razorback Sucker in the Verde River,** *Chris Jenny, University of Arizona*

Goal of Presentation

#### Notes:

- 67 fish stocked in the river and Horseshoe lake (35 river, 32 lake)
- 51% and 16% mortality respectively
- Emigrants 11.4% and 25%, respectively
- Downstream movement from all fish
- No fish in the river for a few months
- Sharp dips in survival in June, due to poor water quality
- 7-13 fish remain today
- 9 miles between drop and lake, range from 3 hours (fast) and average was 22 hours
  - Not normal movement for the fast fish, probably due to a flow event

#### Questions/Discussion/Clarification:

- Any tribs flowing consistently? No, but periodic pulses

#### **CCAST,** *Krystie Miner, US Fish and Wildlife Service*

Goal of Presentation [LINK](#)

- CCAST update
- Ammonia control project update

#### Notes:

- 33 case studies, 26 webinars, 3 workshops
- Tool Development (project checklists/catalogs/regulatory support tool/non native aquatic species toolkit)
- Collaborative action (900k toward research)
- Bullfrog control – 200 attendees at a workshop, launched a working group (goals below)
  - Support projects in AZ, UT and beyond
  - Summarize Bull Frog impacts
  - Bullfrog control program guidance – standardized and adopted (hopefully)
  - Addressing key human dimensions side (pending idea)
- Funded research projects
  - Crayfish removal using ammonia

- Fish movement through Pearce ferry rapid
- Gila and LCR basin – crayfish survey, modeling and mapping
- Pop dynamics and community interactions of crayfish and protected fishes and reptiles in the Gila river basin
- Integrating monitoring, genetics, and simulation approaches for strategic bullfrog removal and control

### **West Fork of the Black River, *Zac Jackson, USFWS***

Topics of Presentation [LINK](#)

- Removal efforts of Brook trout
- Rotenone planning

#### Notes:

- Total of 13, 681 fish removed, 1000 staff days, 953 passes at 2 streams over 2 years
  - Still need to do more
- Few brook trout remain in Thompson
- Many remain (young fish) in West Fork Black River
- Rotenone planning, Kurt Gill
  - Public opposition, stepping away from rotenone in this location, West Fork Black
  - State law and concerns led Commission to not support; public like trout, concerns over the treatment itself.

#### Questions/Discussion/Clarification:

- Plans for next year? No, imagining scenarios, Apache trout recovery team needs to get together
- Plans for follow up meetings with partners re: rotenone? Confusion about moving forward, looking at yy brook trout possibly

### **Gila River Basin Film Project, *Jeremy Monroe, Freshwaters Illustrated***

#### Notes:

- Hidden Rivers film, hoping to replicate in the southwest
- Go out and capture biodiversity imagery (underwater, etc)
- Fossil creek “go to” for some content
- LCR humpback chubs
- Great Basin work as well on springs, Ash Meadows
- Also videos of what the fish are up against
- Invasive species
- San Juan river work
- More Gila work
- Showing conservation impacts

### **Upcoming Funding Opportunities, *Lisa Rivera, BOR***

Presentation [LINK](#)

- Across 4 grants 950k available
- WaterSMART
  - 50% cost share (non federal)
  - Most non federal can apply
  - Funding allocated through annual competitive process 1/yr



- Infrastructure Bill – Aquatics Ecosystems Funding
  - Study, design, and construct restorations/prtection projects
  - States, tribes, org with water/power delivery
  - Entities owning a dam, fish barrier
  - Collaborative element – large scale, multiple river basins
  - 35% cost share
  - Activities
    - Removal of barriers, dams, restoring connectivity, habitat, water availability, quality, temperature
- Environmental Water Resources Projects
  - Environmental benefits, reliability of water resources
  - Eligibility: similar
  - 25%-50% cost share – 25% MUST increase water values, collaboratives, 1 or more of an established strategy
  - Up to 3 million for 5 years, no more than 5 million total
  - Examples of projects include: canal lining, restoration activities – fish screens/ladders, hatcheries, mitigating drought,
- Water Management and Restoration Project Design
  - Eligibility: water marketing, supply, drought resiliency,
  - 50% cost share
- Cooperative Watershed Management Program: Phase 1
  - Watershed groups, continuing and starting new, gathering data,
  - 0% cost share
  - 200k funding over 2 year
- Applied Science Grants
  - Science modelling, forecasting tools,
  - Eligibility: universities, non profits, partnering with entities with water delivery authority
- Potential focus areas for new projects that may fit within BOR grants
  - Brainstorm projects
    - Invasive spp control
    - Restoration
    - Large scale opportunitites on where to locate fish
    - Hatchery Phase 3? or other ARCC projects
      - Flow condition facilities
      - Water conservation, recirculation, etc
    - Maintenance of existing barriers – Aravaipa as an example

#### Notes

- Gila river basin has been a small portion so far
  - Eg, Aravaipa creek – funded through internal applied science grant (technically under WaterSMART)
- Match can be prohibitive
- Technical committee can discuss options (Teir 2) for this kind of funding
- Lisa offered to come to a meeting to discuss whether the grant program would be a good fit for a particular project.

**Gila River Basin Native Fishes Conservation Program - Technical Committee Meeting  
December 15, 2022**

**Zoom:** <https://us02web.zoom.us/j/83578017836?pwd=bCtMSkIJQmthZTdiaDd4THNFs2hyZz09>

**Meeting ID:** 835 7801 7836 **Passcode:** 702989

**Technical Committee - MEETING NOTES**

**Technical Committee Meeting Objectives**

- Discuss 2023 workplan adjustments, 2024 proposed projects, and Tier 2 projects.
- Provide updates on other projects

**Action Items**

- [Kent to put to Strategic Plan on the website](#)

**Process overview and update for GRBNFCP- Kent Mosher, BOR**

- Strategic Plan update
  - Technical committee provided a review
  - Nothing major but did shift the goals and objectives (project proposals)
  
- Gila River Basin Native Fishes Conservation Program goals and objectives for Calendar Years 2023-2027.

<b>Scientific Foundation</b>		
<b>No</b>	<b>Goal</b>	<b>Objective</b>
1	Investigate novel methods to control nonnative aquatic biota.	a) Seek at least one opportunity to partner or fund new control methods or improvements upon existing methods.
2	Update and assemble existing knowledge of life history needs and ecology of Gila River basin native fishes.	a) As opportunities arise, initiate ecological/life history studies of native biota where such understanding can assist with conservation goals of the Program.
3	Improve propagation techniques for spinedace and loach minnow.	a) At a minimum, identify and implement at least one research project aimed at improving propagation.
4	Complete genetic management plans for priority species.	a) Develop genetic management plans for spinedace, loach minnow, and Gila topminnow.
5	Investigate new stocking strategies to improve survival of repatriated fish.	a) At a minimum, document existing stocking strategies, identify locations with poor survival, and identify likely causes of poor survival.

<b>Preventing Extinction and Managing Toward Recovery</b>		
<b>No</b>	<b>Goal</b>	<b>Objective</b>
1	Maintain the Aquatic Research and Conservation Center (ARCC)	a) Use genetic management plans for development of brood stock management plan.

	and explore alternative locations for establishment of hatchery stocks of upper Gila and San Francisco River lineages of spikedace and loach minnow.	b) Augment hatchery populations as outlined in broodstock management plans.
		c) Ensure the Aquatic Research and Conservation Center (ARCC) has the staff support and supplies necessary to maintain propagation of spikedace and loach minnow at a level needed to meet stocking demands provided wild fish are available.
		d) Determine start up and O&M costs for New Mexico hatchery stocks of spikedace and loach minnow.
2	Protect native fish populations from nonnative fish invasions.	a) Complete the scoping, environmental compliance, and design of two additional fish barriers, and initiate their construction.

3	Remove nonnative aquatic species threats.	a) Eradicate or suppress nonnative aquatic species from a minimum of five surface waters to prepare them for repatriations of native fishes.
4	Replicate populations and their associated native fish community into protected streams and other surface waters.	a) Replicate Gila topminnow stocks into a minimum of 10 surface waters.
		b) Replicate each of the other priority species into a minimum of one surface water.
5	Protect, maintain, and restore degraded aquatic habitats to use for native fish.	a) Restore habitats in a minimum of one location with existing populations or in a location planned for repatriations.
		b) Acquire or work with other programs to acquire easements, land, or water rights to protect key surface water.
6	Inform and educate the public about the conservation status and values of native fishes and the problems nonnative fishes create for them.	a) Implement a minimum of one I&E opportunity per year.
		b) Update Program website at least twice per calendar year.
7	Monitor to quantitatively measure and evaluate project success in	a) Implement and report on Long-Term Monitoring Plan for Native Fish Populations in the Gila River Basin.

	improving the status of target species and their habitats.	<p>b) Develop/identify monitoring standards as necessary to adequately evaluate fish barrier function, success and failure of nonnative fish species eradications/suppression, and success and failure of repatriations of 5 priority species.</p> <p>c) Incorporate eDNA monitoring techniques and/or other emerging technologies into monitoring practices.</p>
8	Maintain accurate Program tracking records.	a) Continue to develop annual workplans and reports to track program accomplishments.

- Tracking – Goal 6 -failed to meet, acquire or work with partner, water acquisition, easement opportunities
  - Decided to leave this goal, but nested under another goal
  - There are opportunities to fill this goal
  - USFWS has some money to assist with this and is working on something, support to keep the goal.
  - Possibility to “go big” on grant opportunity here
- [Kent to put to Strategic Plan on the website](#)
- Amendments to the SD and LM recovery plan; supposed to supersede task 6, not a 1.1 transfer, for BOR purposes, continue to use old recovery tasks
  - Influences project scoring
- Consultation
  - Assessment produced by BOR, USFWS has looked at it, formal this spring,
  - Reason for consultation is the listing of the 2 garter snakes, changes to monitoring, and administration
  - Permit related – can’t be covered under other agencies, another reason for the re-consultation – Action Agencies have to have a BO which is basically the “permit”
- Timeline review and next steps -
  - March review likely not needed, redundant
  - Can meet to discuss scores if need be
- Discussion needed about \$\$ after the scoring, costs have gone up
  - Eagle creek \$\$?
- When will there be more info on budget?
  - BOR is only 20% funded at this time
  - Priority agreements are in place, eg, NM is set for 2 year, AGFD waiting
  - By April, BOR should know more
  - May have to volunteer to drop projects
  - Hope to assume 550k, but \$\$ not here
- If the cap stays at 550k, it will be challenging to partners
  - May have to look at grant money to sustain staff
- Grants – Counties are a good option for match, need to be creative in getting money

### FY 2023 Workplan

- Work plan clarifications
- NM Adjustments
  - Project 2 – Harden Cienega – hoping to get access from land owners
  - Removing Sapillo creek

- Add in stocking SD in the Tularosa – need to check with FS on this
  - Monitoring contract goes here, shouldn't be an issue
  - Could be premature, will discuss with Yvette to determine “readiness”
- Glenwood pond survey – potential location for RT chub
- AZ Adjustments
  - Mostly balancing costs, increases – same total cost
  - Added Sycamore creek, GTM stocking – call pending for compliance
    - Survey in spring and coordination
  - Spring Ck – TM stocking because they haven't been found
  - Blue River – added some stockings
  - Cost to Sharp Springs goes down, no need for 2<sup>nd</sup> treatment – added an augmentation this year
  - No changes to ARCC workplan – other than adding “can hold salvage fish”
- No adjustments from Tim and Heidi – BLM

### Proposed Projects

- 2024 proposed projects –
  - BLM – Heidi – removals in Bonito and Aravaipa – lower price range, 25k
    - Able to get funding from other opportunities
  - NM
    - Most are continuations.
  - AZ
    - Most are continuations.
    - George Weise project – AGFD property (new task in 24 workplan)
    - Eagle creek back in
  - BLM – Tim
    - Working on some items, not sure he will be able to get it done, may hold off
    - Will discuss with Kent

### Updates

- Information and Education - *Kent Mosher*
  - Gila River Basin Film Project
  - Sharing Tails – looking for money (contract ends in August 2023), hoping the program can continue
  - Field Guide to the Fishes of AZ
- Fish Barriers – *Kent Mosher*
  - Eagle creek
    - Out of fish biologists hands, solicitors are working through license and easement agreement
    - Could be any day, once that is finalized, NEPA process starts.
    - Current goal Fall 2024 build (earliest)
    - Will have a better idea soon, needs to have the construction contract out by Feb.
    - Gives 1 year for NEPA
    - Safe harbor agreement in place
    - Land is Freeport-MacMoran
  - Upper Verde River Wild and Scenic Suitability Study EA
    - EA is out 12/11-1/10 include link
    - This process needs to be done before the barrier discussions can happen
  - San Francisco River
    - Pleasanton Diversion – Gila National Forest
    - BOR will continue having discussions, surveyor will go back out late winter to collect area data (maps, etc)
    - Investigate drop structure options
    - Water use and fish use could both increase

- O'Donnell barrier
  - On hold – Research ranch on BLM had concerns

### **Tier 2 Project discussion**

- Reviewed previous lists ([link](#))
- Ideas added
- Notify Technical and Policy committees when tier 2 projects are funded (which ones and how much is funded)

### **Next steps**

- Next year's Technical Committee meeting Dec 12-14
- May/June for Policy committee meeting